UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/877,378	06/08/2001	Michael Nelson	Vmware 10	2444

25877   7590   06/30/2004

JEFFREY SLUSHER
34825 SULTAN-STARTUP RD.
SULTAN, WA 98294

EXAMINER
TRUONG, LECHI

ART UNIT	PAPER NUMBER
2126	

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/877,378	MICHEAL NELSON
	Examiner	Art Unit
	LeChi Truong	2126

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 June 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-45</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>26,27,44 and 45</u> is/are allowed.

6)☒ Claim(s) <u>1-3,12,21-24,28,29,33 and 41-43</u> is/are rejected.

7)☒ Claim(s) <u>4-11,13-20,25,30-32 and 34-40</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>10/20/2003</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

1.   Claims 1-45 are presented for the examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1-3, 24, 28, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Bonola (US. Patent 5,913,058) in view of Solomon (US. Patent 6,269,409 B1).

3.   **As to claim 1**, Bonola teaches the invention substantially as claimed including: hardware

processor (the I/O processor, col 3, ln 9-22/ col 4, ln 45-55, col 5,l n 1-20), a first operating

system (the host processor, col 3, ln 9-22/ col 4, ln 45-55, col 5,l n 1-20), a most privileged,

system level/ direct access col 2, ln 25-27), initializing the computer (boot time, col 5,l n 1-7/ col

7, ln 57-61/ col 9, ln 62-67 to col 10, ln 3-10/ col 2, ln 65-67), a kernel (the real-time kernel, col

3, ln 9-22/ col 4, ln 45-55, col 5,l n 1-20), a second operating system(col 9,l n 39-44), loading

the kernel(loads the real-time kernel, col 3, ln 9-21), starting execution of the kernel(the real-

time kernel to be loaded into the system memory and executed on the I/O processor prior to the

host operating system, col 3,l n 10-21), handed request for the system resource(col 5, ln 15-22).

4.   Bonola does not explicit teach the kernel substantially displacing the COS. However,

Solomon teaches the kernel substantially displacing the COS (Window NT operating system to

the base machine into a format that is processed by the Unix operating system, col 7, ln 28-37/ col 2, ln 20-30).

5.   It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Bonola and Solomon because Solomon's Window NT operating system to the base machine into a format that is processed by the Unix operating system would allow for execution for multiple operating systems depend on the emulation of one environment or the other and provide an improvement for concurrently executing multiple operating systems.

6.   **As to claim 2,** Bonola teaches a load call module (the loader program 32, col 7, ln 37-45), the load module (col 8, ln 9-15).

7.   **As to claim 3,** Bonola teaches the load call module as a driver (col 7, ln 40-43).

8.   **As to claim 24,** Bonola teaches halting excution of the kernel(col 8, ln 31-32), reinstalling a state of the first operating system, resuming executiong of the first operating system(col 7, ln 12-21), the kernel is removed from the computer(the kernel from the storage device is moved to the system memory, col 15-18/ 25-30)

9.   **As to claims 28, 29,** they are apparatus claims of claims 1, 2; therefore, they are rejected for the same reasons as claims 28, 29 above.

10.   Claims 12, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonola (US. Patent 5,913,058) in view of Solomon (US. Patent 6,269,409 B1) and further in view of Admitted Prior Art (APA).

11. **As to claim 12**, Bonola and Solomon do not teaches virtual machine, a virtual machine monitor. However, APA teaches virtual machine, a virtual machine monitor(virtual machines, virtual machine monitor, col 2, ln 4-11).

12.   It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Bonola, Solomon and APA because APA's virtual machines, virtual machine monitor would made the computer configuration for resource management more consistent.

13. **As to claim 33**, it is an apparatus claim of claim 33; therefore, it is rejected for the same reason as claim 33 above.

14.   Claims 21, 22, 41, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonola (US. Patent 5,913,058) in view of Solomon (US. Patent 6,269,409 B1) in view of Admitted Prior Art (APA) and further in view of Bugnion et al (6,017,938).

15. **As to claim 21**, Bonola, Solomon and APA do not teach mapping a kernel address space into a VMM address space. However Bugnion teaches mapping a kernel address space into a VMM address space (Disco provides ... this organization was selected to match the assumptions made by the operating system, col 9, 50-53).

16.   It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Bonola, Sonola, APA and Bugnio because Bugnio's Disco provides ... this organization was selected to match the assumptions made by the operating system would provide the operating system execute on the plurality of virtual machines and

transparently share the plurality of computer processors and physical resources through the
VMM layer.

17.   **As to claim 22**, Bagnio teaches the setting a segment length for the VMM lager than a
minimum length necessary to fully contain both the VMM and the kernel (col 10, ln 37-43), free
of the any need to change a corresponding segment (col 10, ln 44-50).

18.   **As to claim 41, 42**, they are apparatus claim of claim 21, 22 ; therefore, they are rejected
for the same reasons as claims 21, 22.

19.   Claims 23, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonola
(US. Patent 5,913,058) in view of Solomon (US. Patent 6,269,409 B1) in view of Admitted Prior
Art (APA) and further in view of Subrahmanyam (US. Patent 6,735,601 B1).

20.   **As to claim 23**, Bonola, Solomon and APA do not teach virtual disk, virtual disk block
pointer, and a file descriptor table storing block identification. However, Subrahmanyam teaches
(VDIK/ virtual disk, col 14, ln 60-67/ Fig. 4, block pointer, block hash table, col 15, ln 39-47).

21.   It would have been obvious to one of the ordinary skill in the art at the time the invention
was made to combine the teaching of Bonola, Solomon, APA and Subrahmanyam because
VDSK/ virtual disk, block pointer, block hash table would allow the server to relocate the
various blocks according to its own needs using its native algorithms.

22.   **As to claim 43**, it is an apparatus claim of claim 23; therefore, it is rejected for the same
reason as claim 23 above.

Allowable Subject Matter

23.   Claims **4-11, 13-20, 25, 30-32, 34-38, 39-40** are objected to as being dependent upon a

rejected base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

24.   Claims **26, 27, 44, 45** are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to LeChi Truong whose telephone number is (703) 305 5312. The

examiner can normally be reached on 8 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on 703-305-9678. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR of Public PAIP. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIP

system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

LeChi Truong

June 24, 2004

MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100